

Application No. 10/825,138
Reply to the Office action of December 23, 2005

Amendment to the drawings

Please replace the drawings presently on file with the drawings submitted herewith.

The attached sheet 1/2, comprising Fig. 1, and sheet 2/2, comprising Fig. 2, respectively replace the corresponding original sheets. No changes have been made, however the submitted Figs. 1 and 2 are formal versions of the informal Figs. 1 and 2 presently on file.

Attachment: Replacement Figs. 1 and 2

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REMARKS/ARGUMENTS

Claims 1-11 and 13-22 are presently pending. Claim 12 has been cancelled without prejudice.

Specification

The disclosure was objected to for having element 34 designating both the "power plant compressor" and the "cone". Paragraph [0015] of the disclosure has been amended to remove the association of the "power plant compressor" with reference character 34. Reconsideration is requested.

Paragraph [0015] has further been amended, for reasons unrelated to any objections raised by the Examiner, to remove the association of the "main inlet opening" with reference character 30.

Claim objections

Claim 12 was objected to for various informalities. As claim 12 is cancelled, these objections are now moot.

Claim rejections 35 U.S.C. § 103

Claims 20-22 were rejected under 35 U.S.C. 103(a) as being unpatentable over Steiner (US 5,987,877) in view of Whiteman et al. (US 2,487,842) and Rüd et al. (US 4,999,994). Reconsideration of the rejection is respectfully requested on the following grounds.

In holding an invention obvious in view of a combination of references, there must be some suggestion, motivation, or teaching in the prior art that would have led a person of ordinary skill in the art to select the references and combine them in the way that would produce the claimed invention. (*Karsten Mfg. Corp. v. Cleveland Golf Co.*, 242 F.3d 1376, 1385 (Fed. Cir. 2001)).

Steiner teaches the use of a cooling fan 11 to circulate air through an oil cooler 5. The cooling fan 11 is either driven by a gear box 13 assigned to the gas turbine 2 (Figures 1-2) or by an electric motor 14 (Figure 3). The oil cooler 5 is only used to cool the transmission oil (see column 2, lines 43-45). The cooling fan 11 is located upstream of the turbine section.

Whiteman et al. teach a heat exchanger 47 for cooling lubricant for bearings 27, 28, 29 of a gas turbine engine. As shown in the Figure, air is driven through the heat exchanger 47 by an impeller 57 which is driven completely independently from the turbine section of the gas turbine engine. Cooling transmission oil and cooling the oil for an entire engine represent two substantially different scales of cooling, i.e. the cooling of a turbine section necessitates substantially more energy than the cooling of transmission oil. As

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such, there is no motivation in either references to combine Whiteman et al., used to cool an engine, with Steiner, used to cool transmission oil, to suggest that Steiner could be used to cool the oil for the turbine section of an engine.

Rüd et al. teach the use of a cooling air impeller 5 driven by a shaft 4 of the gas turbine engine 2 for drawing air through an oil cooler 7, which cools oil for the speed reduction transmission 3 (see abstract). The impeller 5 is located within a cooling air duct 6 which communicates with the gas turbine inlet duct 11, i.e. the impeller 5 is located upstream of the turbine section (not shown in the Figures). Thus, Rüd et al. cannot be used to teach the location of an impeller downstream of a turbine.

Further, even if the references were to be improperly combined with hindsight and without suggestion, none of the references teach having the auxiliary compressor downstream of the turbine section, as set forth in claim 20.

Therefore it is submitted that the rejection is improper, and that claim 20 is both novel and inventive. It is also submitted that at least in view of their dependence on claim 20, dependent claims 21-22 are also novel and inventive. Reconsideration is therefore respectfully requested.

Claims 1, 2, 5, 6, 8, 9 and 12 were rejected under 35 U.S.C. 103(a) as being unpatentable over Sheoran et al. (US 5,265,408) in view of Rüd et al. Claim 12 has been cancelled and as such the rejection of this claim is now moot. Reconsideration of the rejection of the remaining claims is respectfully requested on the following grounds.

The background section in Sheoran et al. describes the use of prior art fans that are provided to pump cooling air through an APU compartment. Such fans are driven at high speed through a complex gear assembly ("their multiplicity of high speed, rotating parts", col. 1, lines 53-54) such as the fans briefly described in the background of the present invention.

Sheoran et al. teach an eductor that incorporates a mixer nozzle to entrain sufficient air flow through a compartment to provide necessary cooling. The object of Sheoran et al. is to provide a cooling system that can "provide all the necessary cooling including that required by an oil cooler" (col. 2, lines 27-28). Another object of Sheoran et al. is to "provide an APU compartment cooling system that does not include a cooling fan" (emphasis added – col. 2, lines 35-36). Thus, Sheoran et al. points away from the combination of a fan with the structure of the eductor cooling system such as shown in Fig. 1. Accordingly, there is no motivation to combine the prior art described in the background of Sheoran et al. with the eductor structure taught by the patent.

Further, there is no motivation to combine Rüd et al. and Sheoran et al. to suggest that a fan driven as taught by Rüd et al. can be used in a structure such as

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taught by Sheoran et al., as such a combination would be ignoring the explicit teachings of Sheoran et al. set forth above.

Therefore it is submitted that the rejection is improper, and that claim 1 recites structure which is both novel and inventive. It is also submitted that at least in view of their dependence on claim 1, dependent claims 2, 5, 6, 8 and 9 are also novel and inventive. Reconsideration is therefore respectfully requested.

Allowed claim 13 has been voluntarily amended, for reasons unrelated to any objections raised by the Examiner, to correct a typographical error in line 2 thereof and remove the term "section" which was unnecessarily included in the claim.

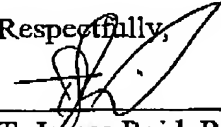
The Figures have been amended to replace the informal drawings on file with corresponding formal drawings. No new matter has been added.

Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Respectfully,

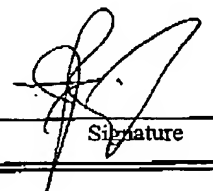
March 22, 2006

Date


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